

Sterility of Intravenous Catheterization Tubing: Is it Safe to Remove the Sterile Cap for an Extended Period of Time?

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This research shows if removing the sterile cap from the intravenous catheterization tubing (following the injection of a saline solution) affects the sterility of the tubing after being exposed to the environment of a nuclear medicine department for up to four hours before use.

A total of thirty intravenous catheterization tubes were primed with a saline solution, sterile cap removed, and set on an IV start tray at a local hospital in the nuclear medicine department. The tubes were left exposed to the environment for a total of four hours. The environment included the movement of patients and technologists walking by for various reasons. The end of the tubes where the sterile cap was removed were swabbed using a sterile nasal swab moistened with sterile water at time 0hr, 2hr, and 4hr and wiped on a sheep's blood agar plate. A different swab was used each time. After 48 hours of incubation at 37 degrees Celsius the samples were evaluated for pathogenic growth, non-pathogenic growth and no growth.

None of the samples had any pathogenic growth. 17 out of 90 (18%) samples had non-pathogenic growth; 73 had no growth. Growth was most frequently observed at 0mins.

Leaving the sterile cap off of the intravenous catheterization tubing (after injecting it with saline solution) for an extended period of time (four hours) led to no pathogenic growth. Since there were non-pathogenic growths on 17 of the agar plates, the possibility of pathogenic growth is still there.